UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,564	02/18/2004	James P. Quigley	1361.036US1	9290

21186 7590 10/19/2007
SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER	
SANG, HONG	

ART UNIT	PAPER NUMBER
1643	

MAIL DATE	DELIVERY MODE
10/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/781,564	QUIGLEY ET AL.	
	Examiner	Art Unit	
	Hong Sang	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/22/07*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 34-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 34-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/22/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Exhibits RCE-A and RCE-B*.

DETAILED ACTION

RE: Quigley et al

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/22/07 has been entered.

2. The information disclosure statement (IDS) filed on 8/22/07 has been considered. A signed copy is attached hereto.

3. Claims 1 and 34-36 are pending. Claims 2-33 are cancelled. Claims 1 and 34-36 are amended.

4. Claims 1 and 34-36 are under examination.

Rejections Withdrawn

5. The rejection of claims 34-36 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter is withdrawn in view of applicant's amendment to the claims.

6. The rejection of claims 34-36 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is withdrawn in view of applicant's amendment to the claims.

7. The rejection of claims 34 and 36 under 35 U.S.C. 102(e) as being anticipated by Tang et al. (WO 200270539A2, Pub. Date: 9/12/2002, effective filing date at least 3/5/2002) is withdrawn in view of applicant's amendment to the claims.

8. The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Scherl-Mostageer et al. (Oncogene, 2001, 20: 4402-4408, IDS) is withdrawn in view of applicant's submission of 37 C.F.R. 1.132 declaration and new grounds of rejections.

New Grounds of Objections and Rejections

Priority

9. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e). The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with

the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 60/448,828, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application.

The instant claims 34-36, drawn to an isolated variant of SEQ ID NO.1 consisting of a single amino acid change at position 525, 709 or 827 of SEQ ID NO.1, which is not described in the applications no: 60/448,828. The 60/448,828 only discloses a variant consisting of three amino acids changes at position 525, 709 and 827 (see page 9, last paragraph and page 31, lines 12-14). Accordingly, the claims are given the priority date of the current filing date 2/18/2004).

If applicant believes that support for claims 34-36 is present in the earliest filed priority document, applicant must, in responding to this action, point out with particularity, where such support may be found.

Claim Rejections - 35 USC § 112, 1st paragraph

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 34-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a **New Matter** rejection.

Claim 34 is drawn to an isolated variant of SEQ ID NO.1, wherein the variant results from the substitution of an arginine with a glutamine at amino acids 525. Claim 35 is drawn to an isolated variant of SEQ ID NO.1, wherein the variant results from the substitution of a glycine with an aspartic acid at amino acid 709. Claim 36 is drawn to an isolated variant of SEQ ID NO.1, wherein the variant results from the substitution of a serine with an asparagine at amino acid 827. Therefore, the isolated variants of claims 34-36 consist of a single amino acid change of SEQ ID NO.1, which is considered new matter since the specification, drawings and claims as filed disclose only a variant consisting of three amino acid changes at positions 525, 709 and 827 of SEQ ID NO.1 (see original claim 32, and specification, page 33, lines 1-4). There is no clear support for a variant consisting of a single amino acid change at the specific position 525, 709 or 827 of SEQ ID NO.1.

If applicant believes that support for the above-mentioned phrases or terms is present in the specification, claims or drawing as originally filed, applicant must, in responding to this action, point out with particularity, where such support may be found.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by accession no. BAB15511 (see IDS, first seen at NCBI 9/30/2000).

The accession no. BAB15511 discloses a protein, whose amino acid sequence is 100% identical to the instant SEQ ID NO.1 (see sequence alignment, Exhibit RCE-A). Although the accession no. does not disclose that the protein is glycosylated, the glycosylation is considered as an inherent property of the protein, as evidenced by the instant specification. The specification teaches that the isolated SIMA135 (i.e. SEQ ID NO.1) is glycosylated (see page 9, lines 2-4, 10-11, and page 10, line 13-14). Therefore, the protein isolated from signet-ring cell carcinoma cells (see page 2, line 6 of the BAB15511 information provided in IDS), or synthesized in eukaryotic cells such as yeast by recombinant technology would be glycosylated. As such, the accession no. BAB15511 anticipates the instant invention.

14. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by accession no. Q9H5V8 (See accession no. Q9H5V8 information sheet, and revision history, release date: 3/1/2001).

The accession no. Q9H5V8 discloses a protein, whose amino acid sequence is 100% identical to the instant SEQ ID NO.1 (see sequence alignment, Exhibit RCE-B). Although the accession no. does not disclose that the protein is glycosylated, the glycosylation is considered as an inherent property of the protein, as evidenced by the

instant specification. The specification teaches that the isolated SIMA135 (i.e. SEQ ID NO.1) is glycosylated (see page 9, lines 2-4, 10-11, and page 10, line 13-14). Therefore, the human protein as disclosed by accession no. Q9H5V8 would be inherently glycosylated. As such, the accession no. Q9H5V8 anticipates the instant invention.

Conclusion

15. No claims are allowed.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Sang whose telephone number is (571) 272 8145. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry R. Helms can be reached on (571) 272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hong Sang, Ph.D.
Art Unit 1643
Sept. 25, 2007

/Christopher Yaen/
Primary Examiner
Art Unit 1643
October 10, 2007

Exhibit RCE-B

```
<!--StartFragment-->RESULT 1
CDCP1_HUMAN
ID   CDCP1_HUMAN    STANDARD;      PRT;   836 AA.
AC   Q9H5V8; Q49UB4; Q6NT71; Q6U9Y2; Q8WU91; Q96QU7; Q9H676; Q9H8C2;
DT   07-MAR-2006, integrated into UniProtKB/Swiss-Prot.
DT   01-MAR-2001, sequence version 1.
DT   11-JUL-2006, entry version 22.
DE   CUB domain-containing protein 1 precursor (Transmembrane and
DE   associated with src kinases) (Membrane glycoprotein gp140)
DE   (Subtractive immunization M plus HEp3-associated 135 kDa protein)
DE   (SIMA135) (CD318 antigen).
GN   Name=CDCP1; Synonyms=TRASK; ORFNames=UNQ2486/PRO5773;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini;
OC   Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE [MRNA] (ISOFORM 1), VARIANT GLN-525, FUNCTION, AND
RP   TISSUE SPECIFICITY.
RX   MEDLINE=21359860; PubMed=11466621; DOI=10.1038/sj.onc.1204566;
RA   Scherl-Mostageer M., Sommergruber W., Abseher R., Hauptmann R.,
RA   Ambros P., Schweifer N.;
RT   "Identification of a novel gene, CDCP1, overexpressed in human
RT   colorectal cancer.";
RL   Oncogene 20:4402-4408(2001).
RN   [2]
RP   NUCLEOTIDE SEQUENCE [MRNA] (ISOFORM 1), PROTEIN SEQUENCE OF 30-48;
RP   281-293 AND 427-438, GLYCOSYLATION, PHOSPHORYLATION, SHEDDING,
RP   SUBCELLULAR LOCATION, AND TISSUE SPECIFICITY.
RX   MEDLINE=22547370; PubMed=12660814; DOI=10.1038/sj.onc.1206220;
RA   Hooper J.D., Zijlstra A., Aimes R.T., Liang H., Claassen G.F.,
RA   Tarin D., Testa J.E., Quigley J.P.;
RT   "Subtractive immunization using highly metastatic human tumor cells
RT   identifies SIMA135/CDCP1, a 135 kDa cell surface phosphorylated
RT   glycoprotein antigen.";
RL   Oncogene 22:1783-1794(2003).
RN   [3]
RP   NUCLEOTIDE SEQUENCE [MRNA] (ISOFORM 1), PROTEIN SEQUENCE OF 30-34 AND
RP   369-375, VARIANTS GLN-525 AND ASP-709, IDENTIFICATION BY MASS
RP   SPECTROMETRY, PHOSPHORYLATION, GLYCOSYLATION, TISSUE SPECIFICITY,
RP   INTERACTION WITH CDH2; CDH3; SDC1; SDC4 AND ST14, AND FUNCTION.
RX   PubMed=16007225; DOI=10.1038/sj.onc.1208582;
RA   Bhatt A.S., Erdjument-Bromage H., Tempst P., Craik C.S., Moasser M.M.;
RT   "Adhesion signaling by a novel mitotic substrate of src kinases.";
RL   Oncogene 24:5333-5343(2005).
RN   [4]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA] (ISOFORM 3).
RX   MEDLINE=22887296; PubMed=12975309; DOI=10.1101/gr.1293003;
RA   Clark H.F., Gurney A.L., Abaya E., Baker K., Baldwin D.T., Brush J.,
RA   Chen J., Chow B., Chui C., Crowley C., Currell B., Deuel B., Dowd P.,
RA   Eaton D., Foster J.S., Grimaldi C., Gu Q., Hass P.E., Heldens S.,
RA   Huang A., Kim H.S., Klimowski L., Jin Y., Johnson S., Lee J.,
RA   Lewis L., Liao D., Mark M.R., Robbie E., Sanchez C., Schoenfeld J.,
RA   Seshagiri S., Simmons L., Singh J., Smith V., Stinson J., Vagts A.,
RA   Vandlen R.L., Watanabe C., Wieand D., Woods K., Xie M.-H.,
RA   Yansura D.G., Yi S., Yu G., Yuan J., Zhang M., Zhang Z., Goddard A.D.,
RA   Wood W.I., Godowski P.J., Gray A.M.;
RT   "The secreted protein discovery initiative (SPDI), a large-scale
RT   effort to identify novel human secreted and transmembrane proteins: a
RT   bioinformatics assessment.";
RL   Genome Res. 13:2265-2270(2003).
RN   [5]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA] (ISOFORMS 1 AND 2), AND VARIANT
RP   GLN-525.
```

RC TISSUE=Placenta;
RX PubMed=14702039; DOI=10.1038/ng1285;
RA Ota T., Suzuki Y., Nishikawa T., Otsuki T., Sugiyama T., Irie R.,
RA Wakamatsu A., Hayashi K., Sato H., Nagai K., Kimura K., Makita H.,
RA Sekine M., Obayashi M., Nishi T., Shibahara T., Tanaka T., Ishii S.,
RA Yamamoto J., Saito K., Kawai Y., Isono Y., Nakamura Y., Nagahari K.,
RA Murakami K., Yasuda T., Iwayanagi T., Wagatsuma M., Shiratori A.,
RA Sudo H., Hosoiri T., Kaku Y., Kodaira H., Kondo H., Sugawara M.,
RA Takahashi M., Kanda K., Yokoi T., Furuya T., Kikkawa E., Omura Y.,
RA Abe K., Kamihara K., Katsuta N., Sato K., Tanikawa M., Yamazaki M.,
RA Ninomiya K., Ishibashi T., Yamashita H., Murakawa K., Fujimori K.,
RA Tanai H., Kimata M., Watanabe M., Hiraoka S., Chiba Y., Ishida S.,
RA Ono Y., Takiguchi S., Watanabe S., Yosida M., Hotuta T., Kusano J.,
RA Kanehori K., Takahashi-Fujii A., Hara H., Tanase T.-O., Nomura Y.,
RA Togiya S., Komai F., Hara R., Takeuchi K., Arita M., Imose N.,
RA Musashino K., Yuuki H., Oshima A., Sasaki N., Aotsuka S.,
RA Yoshikawa Y., Matsunawa H., Ichihara T., Shiohata N., Sano S.,
RA Moriya S., Momiyama H., Satoh N., Takami S., Terashima Y., Suzuki O.,
RA Nakagawa S., Senoh A., Mizoguchi H., Goto Y., Shimizu F., Wakebe H.,
RA Hishigaki H., Watanabe T., Sugiyama A., Takemoto M., Kawakami B.,
RA Yamazaki M., Watanabe K., Kumagai A., Itakura S., Fukuzumi Y.,
RA Fujimori Y., Komiyama M., Tashiro H., Tanigami A., Fujiwara T.,
RA Ono T., Yamada K., Fujii Y., Ozaki K., Hirao M., Ohmori Y.,
RA Kawabata A., Hikiji T., Kobatake N., Inagaki H., Ikema Y., Okamoto S.,
RA Okitani R., Kawakami T., Noguchi S., Itoh T., Shigeta K., Senba T.,
RA Matsumura K., Nakajima Y., Mizuno T., Morinaga M., Sasaki M.,
RA Togashi T., Oyama M., Hata H., Watanabe M., Komatsu T.,
RA Mizushima-Sugano J., Satoh T., Shirai Y., Takahashi Y., Nakagawa K.,
RA Okumura K., Nagase T., Nomura N., Kikuchi H., Masuho Y., Yamashita R.,
RA Nakai K., Yada T., Nakamura Y., Ohara O., Isogai T., Sugano S.;
RT "Complete sequencing and characterization of 21,243 full-length human
RT cDNAs.";
RL Nat. Genet. 36:40-45(2004).
RN [6]
RP NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA] (ISOFORM 3), AND NUCLEOTIDE
RP SEQUENCE [LARGE SCALE MRNA] OF 1-697 (ISOFORM 1).
RC TISSUE=Kidney;
RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [7]
RP NUCLEOTIDE SEQUENCE [MRNA] OF 1-691 (ISOFORM 1), IDENTIFICATION BY
RP MASS SPECTROMETRY, PHOSPHORYLATION, GLYCOSYLATION, AND TRYPTIC
RP CLEAVAGE.
RC TISSUE=Epidermis;
RX PubMed=14739293; DOI=10.1074/jbc.M309678200;
RA Brown T.A., Yang T.M., Zaitsevskaia T., Xia Y., Dunn C.A., Sigle R.O.,

```
RA   Knudsen B., Carter W.G.;
RT   "Adhesion or plasmin regulates tyrosine phosphorylation of a novel
RT   membrane glycoprotein p80/gp140/CUB domain-containing protein 1 in
RT   epithelia.";
RL   J. Biol. Chem. 279:14772-14783(2004).
RN   [8]
RP   FUNCTION, AND PHOSPHORYLATION.
RC   TISSUE=Epidermis;
RX   MEDLINE=96178080; PubMed=8647901; DOI=10.1083/jcb.132.4.727;
RA   Xia Y., Gil S.G.; Carter W.G.;
RT   "Anchorage mediated by integrin alpha6beta4 to laminin 5 (epiligrin)
RT   regulates tyrosine phosphorylation of a membrane-associated 80-kD
RT   protein.";
RL   J. Cell Biol. 132:727-740(1996).
RN   [9]
RP   FUNCTION.
RX   PubMed=12799299;
RA   Conze T., Lammers R., Kuci S., Scherl-Mostageer M., Schweifer N.,
RA   Kanz L., Buehring H.-J.;
RT   "CDCP1 is a novel marker for hematopoietic stem cells.";
RL   Ann. N. Y. Acad. Sci. 996:222-226(2003).
RN   [10]
RP   FUNCTION, AND TISSUE SPECIFICITY.
RX   PubMed=15153610; DOI=10.1634/stemcells.22-3-334;
RA   Buehring H.-J., Kuci S., Conze T., Rathke G., Bartolovic K.,
RA   Gruenebach F., Scherl-Mostageer M., Bruemmendorf T.H., Schweifer N.,
RA   Lammers R.;
RT   "CDCP1 identifies a broad spectrum of normal and malignant
RT   stem/progenitor cell subsets of hematopoietic and nonhematopoietic
RT   origin.";
RL   Stem Cells 22:334-343(2004).
RN   [11]
RP   IDENTIFICATION BY MASS SPECTROMETRY, INTERACTION WITH SRC AND PRKCG,
RP   AND MUTAGENESIS OF TYR-734 AND TYR-762.
RX   PubMed=15851033; DOI=10.1016/j.cell.2005.02.019;
RA   Benes C.H., Wu N., Elia A.E.H., Dharia T., Cantley L.C., Soltoff S.P.;
RT   "The C2 domain of PKCdelta is a phosphotyrosine binding domain.";
RL   Cell 121:271-280(2005).
RN   [12]
RP   IDENTIFICATION BY MASS SPECTROMETRY, AND FUNCTION.
RX   PubMed=16404722; DOI=10.1002/pmic.200500180;
RA   Andre M., Le Caer J.-P., Greco C., Planchon S., El Nemer W.,
RA   Boucheix C., Rubinstein E., Chamot-Rooke J., Le Naour F.;
RT   "Proteomic analysis of the tetraspanin web using LC-ESI-MS/MS and
RT   MALDI-FTICR-MS.";
RL   Proteomics 6:1437-1449(2006).
CC   -!- FUNCTION: May be involved in cell adhesion and cell matrix
CC       association. May play a role in the regulation of anchorage versus
CC       migration or proliferation versus differentiation via its
CC       phosphorylation. May be a novel marker for leukemia diagnosis and
CC       for immature hematopoietic stem cell subsets. Belongs to the
CC       tetraspanin web involved in tumor progression and metastasis.
CC   -!- SUBUNIT: Interacts with CDH2/N-cadherin, CDH3/P-cadherin,
CC       SDC1/syndecan-1, SDC4/syndecan-4 and the serine protease ST14/MT-
CC       SP1. Also interacts with SRC and PRKCG/protein kinase C gamma.
CC   -!- SUBCELLULAR LOCATION: Cell membrane; single-pass membrane protein
CC       (Potential). Its shedding may lead to a soluble peptide.
CC   -!- ALTERNATIVE PRODUCTS:
CC       Event=Alternative splicing; Named isoforms=3;
CC       Name=1;
CC         IsoId=Q9H5V8-1; Sequence=Displayed;
CC       Name=2;
CC         IsoId=Q9H5V8-2; Sequence=VSP_017432;
CC         Note=No experimental confirmation available;
CC       Name=3;
```

```
CC         IsoId=Q9H5V8-3; Sequence=VSP_017433, VSP_017434;
CC         Note=No experimental confirmation available;
CC   -!- TISSUE SPECIFICITY: Highly expressed in mitotic cells with low
CC       expression during interphase. Detected at highest levels in
CC       skeletal muscle and colon with lower levels in kidney, small
CC       intestine, placenta and lung. Expressed in a number of human tumor
CC       cell lines as well as in colorectal cancer, breast carcinoma and

  Query Match             100.0%;  Score 4392;  DB 1;  Length 836;
  Best Local Similarity   100.0%;  Pred. No. 7.4e-313;
  Matches  836;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MAGLNCGVSIALLGVLLLGAARLPRGAEAFEIALPRESNITVLIKLGTPTLLAKPCYIVI 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAGLNCGVSIALLGVLLLGAARLPRGAEAFEIALPRESNITVLIKLGTPTLLAKPCYIVI 60

Qy         61 SKRHITMLSIKSGERIVFTFSCQSPENHFVIEIQKNIDCMSGPCPFGEVQLQPSTSLLPT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 SKRHITMLSIKSGERIVFTFSCQSPENHFVIEIQKNIDCMSGPCPFGEVQLQPSTSLLPT 120

Qy        121 LNRTFIWDVKAHKSIGLELQFSIPRLRQIGPGESCPDGVTHSISGRIDATVVRIGTFCSN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 LNRTFIWDVKAHKSIGLELQFSIPRLRQIGPGESCPDGVTHSISGRIDATVVRIGTFCSN 180

Qy        181 GTVSRIKMQEGVKMALHLPWFHPRNVSGFSIANRSSIKRLCIIESVFEGEGSATLMSANY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 GTVSRIKMQEGVKMALHLPWFHPRNVSGFSIANRSSIKRLCIIESVFEGEGSATLMSANY 240

Qy        241 PEGFPEDELMTWQFVVPAHLRASVSFLNFNLSNCERKEERVEYYIPGSTTNPEVFKLEDK 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 PEGFPEDELMTWQFVVPAHLRASVSFLNFNLSNCERKEERVEYYIPGSTTNPEVFKLEDK 300

Qy        301 QPGNMAGNFNLSLQGCDQDAQSPGILRLQFQVLVQHPQNESNKIYVVDLSNERAMSLTIE 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 QPGNMAGNFNLSLQGCDQDAQSPGILRLQFQVLVQHPQNESNKIYVVDLSNERAMSLTIE 360

Qy        361 PRPVKQSRKFVPGCFVCLESRTCSSNLTLTSGSKHKISFLCDDLTRLWMNVEKTISCTDH 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 PRPVKQSRKFVPGCFVCLESRTCSSNLTLTSGSKHKISFLCDDLTRLWMNVEKTISCTDH 420

Qy        421 RYCQRKSYSLQVPSDILHLPVELHDFSWKLLVPKDRLSLVLVPAQKLQQHTHEKPCNTSF 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 RYCQRKSYSLQVPSDILHLPVELHDFSWKLLVPKDRLSLVLVPAQKLQQHTHEKPCNTSF 480

Qy        481 SYLVASAIPSQDLYFGSFCPGGSIKQIQVKQNISVTLRTFAPSFRQEASRQGLTVSFIPY 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 SYLVASAIPSQDLYFGSFCPGGSIKQIQVKQNISVTLRTFAPSFRQEASRQGLTVSFIPY 540

Qy        541 FKEEGVFTVTPDTKSKVYLRTPNWDRGLPSLTSVSWNISVPRDQVACLTFFKERSGVVCQ 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 FKEEGVFTVTPDTKSKVYLRTPNWDRGLPSLTSVSWNISVPRDQVACLTFFKERSGVVCQ 600

Qy        601 TGRAFMIIQEQRTRAEEIFSLDEDVLPKPSFHHHSFWVNISNCSPTSGKQLDLLFSVTLT 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 TGRAFMIIQEQRTRAEEIFSLDEDVLPKPSFHHHSFWVNISNCSPTSGKQLDLLFSVTLT 660

Qy        661 PRTVDLTVILIAAVGGGVLLLSALGLIICCVKKKKKKTNKGPAVGIYNGNINTEMPRQPK 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 PRTVDLTVILIAAVGGGVLLLSALGLIICCVKKKKKKTNKGPAVGIYNGNINTEMPRQPK 720

Qy        721 KFQKGRKDNDSHVYAVIEDTMVYGHLLQDSSGSFLQPEVDTYRPFQGTMGVCPPSPPTIC 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 KFQKGRKDNDSHVYAVIEDTMVYGHLLQDSSGSFLQPEVDTYRPFQGTMGVCPPSPPTIC 780

Qy        781 SRAPTAKLATEEPPPRSPPESESEPYTFSHPNNGDVSSKDTDIPLLSTQEPMEPAE 836
```

```
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 SRAPTAKLATEEPPPRSPPESESEPYTFSHPNNGDVSSKDTDIPLLSTQEPMEPAE 836
<!--EndFragment-->
```